In re Patent Application of
RAYNOR
Serial No. **10/786,878**
Filed: **FEBRUARY 25, 2004**

In the Claims:

This listing of claims replaces all prior versions and listing of claims in the application.

Claims 1-10 (canceled).

11. (Currently amended) An image sensing structure comprising:

at least one photodiode comprising

a layer of a first conductivity type and having an upper surface,

a well of a second conductivity type having opposing sides and positioned in said layer, said well defining a collection node, and

an isolation trench at least partially bounding an upper portion of said well at the opposing sides thereof and comprising a shallow trench isolation (STI) having a depth from the upper surface of said layer less than the depth of said well.

12. (Currently amended) An image sensing structure according to Claim 11, wherein said STI ~~isolation trench~~ completely bounds the upper portion of said well.

13. (Canceled).

14. (Previously Presented) An image sensing structure according to Claim 11, wherein said well comprises an N-well.

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15. (Previously Presented) An image sensing structure according to Claim 11, wherein said layer comprises a P-well.

16. (Previously Presented) An image sensing structure according to Claim 11, wherein said layer comprises a P-type epitaxial layer.

17. (Currently amended) An image sensing structure according to Claim 11, wherein an upper surface of said at least one photodiode is substantially defined by said STI ~~isolation trench~~.

18. (Currently amended) An image sensing structure according to Claim 16, wherein an n-p junction is formed at an interface between said STI ~~isolation trench~~ and said well.

19. (Previously Presented) An image sensing structure according to Claim 11, wherein a width of said at least one photodiode is less than or equal to 10 micrometers.

20. (Currently amended) A CMOS image sensing structure comprising:

a semiconductor substrate; and

at least one photodiode in said semiconductor substrate and comprising

a layer of a P-type conductivity and having an upper surface,

a well of an N-type conductivity having opposing sides and positioned in said layer, said well defining a collection node, and

an isolation trench at least partially bounding an upper portion of said well at the opposing sides thereof and comprising a shallow trench isolation (STI) having a depth from the upper surface of said layer less than the depth of said well.

21. (Currently amended) An image sensing structure according to Claim 20, wherein said STI ~~isolation trench~~ completely bounds the upper portion of said well.

22. (Canceled).

23. (Previously Presented) An image sensing structure according to Claim 20, wherein said layer comprises an epitaxial layer.

24. (Currently amended) An image sensing structure according to Claim 20, wherein an upper surface of said at least one photodiode is substantially defined by said STI ~~isolation trench~~.

25. (Currently amended) An image sensing structure according to Claim 23, wherein an n-p junction is formed at an interface between said STI ~~isolation trench~~ and said well.

26. (Previously Presented) An image sensing structure according to Claim 20, wherein a width of said at least one photodiode is less than or equal to 10 micrometers.

Claims 27-35 (Canceled).

36. (New) An image sensing structure according to Claim 11 wherein the depth of the STI is about 2 μm and the depth of the well is about 3 μm.